



PROJECT:

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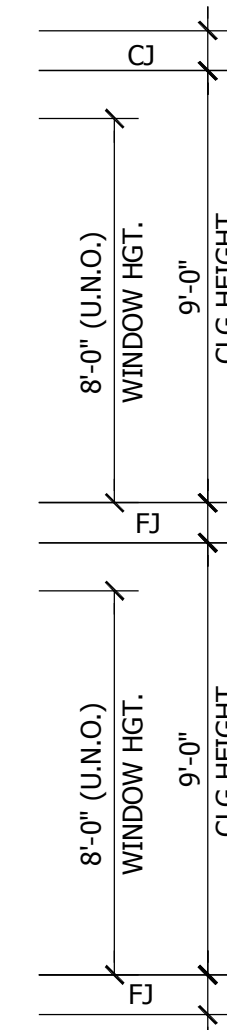
LOT 1  
LANE FARMS

DATE: \_\_\_\_\_  
08-06-25                      BCR

SHEET NO.

**1**

OF **5**



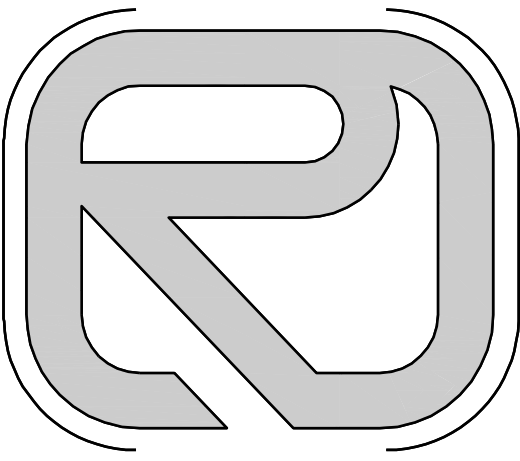
Architectural elevation drawing of a two-story house. The drawing includes the following annotations:

- Roof:** RIDGE VENT (multiple locations), FIBERGLASS SHINGLES AS SPEC. (CLASS "C" MIN.) TYP., 12/12 (multiple locations), 3:12 PITCH.
- Exterior Walls:** FIBER-CEMENT SIDING AS SPEC. w/ 3/4" X 4" TRIM BOARD TYP., 1'-0" O.H. TYP. (at eave).
- Foundation:** BRICK AS SPEC. TYP.
- Windows:** Various window styles including double-hung, tripartite, and a large picture window.
- Porch:** SCREENED PORCH, 6" POST TYP., 8" BAND W/ DRIP CAP TYP.
- Other:** PROVIDE STEPS AND FOOTING AS PER GRADE.

## REAR ELEVATION

SCALE: 1/4"=1'-0"

PLANS DESIGNED UNDER 2018 NORTH CAROLINA RESIDENTIAL CODE.  
SEE ROOF PLAN FOR KNEEWALL HEIGHTS AND LOCATIONS.



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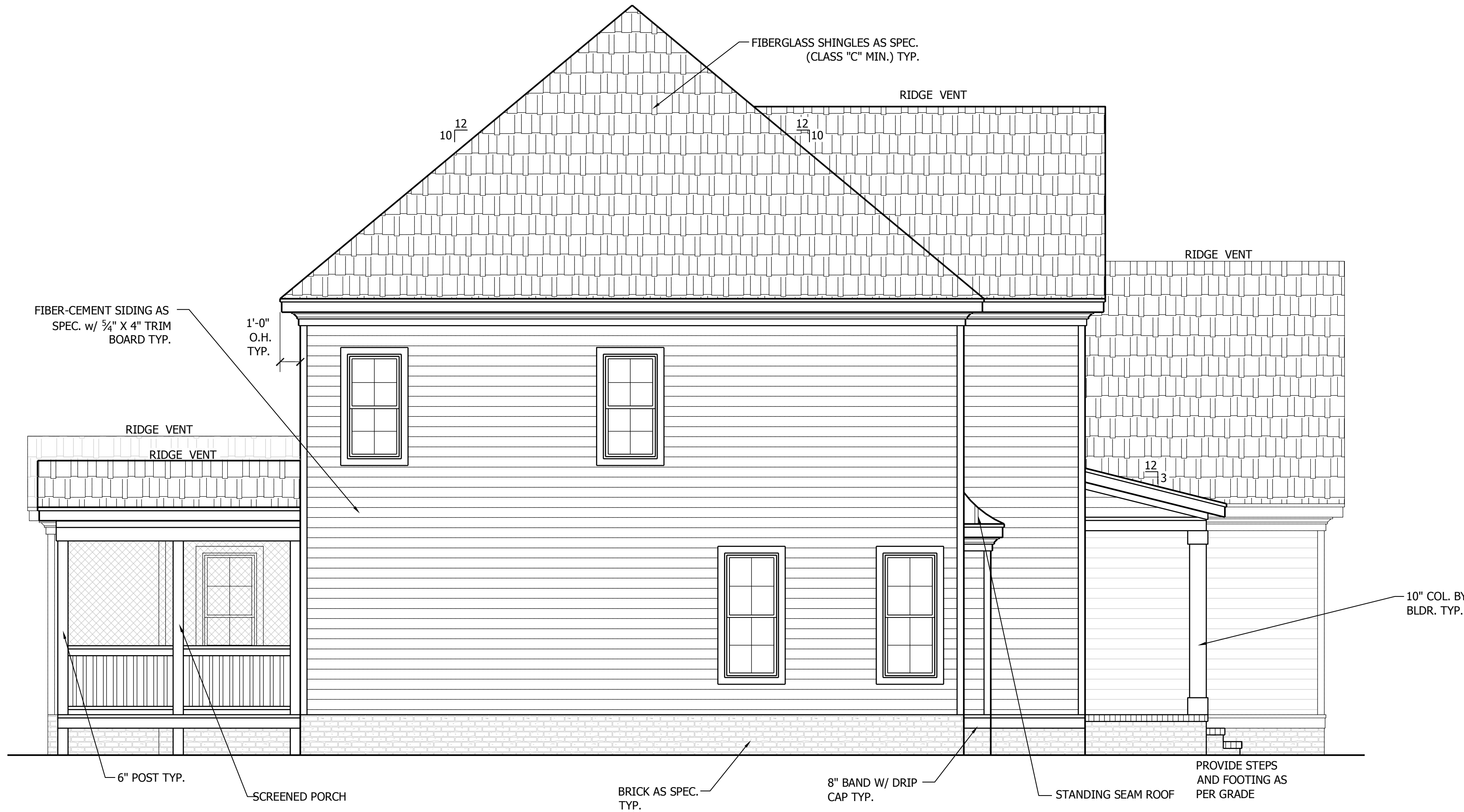
PROJECT:  
**LOT 1  
LANE FARMS**

STEPHENSON  
BUILDERS  
INC.  
1187 NORTH RALEIGH STREET  
ANGIER, NC 27501

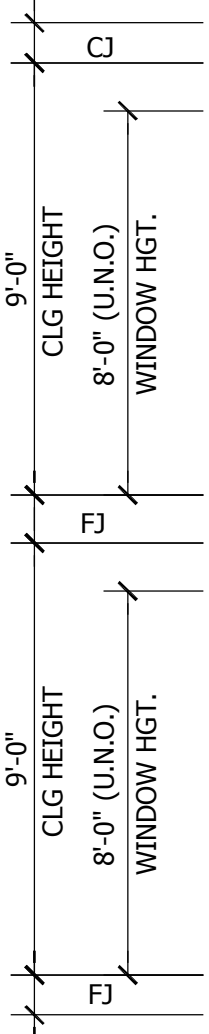
DATE:  
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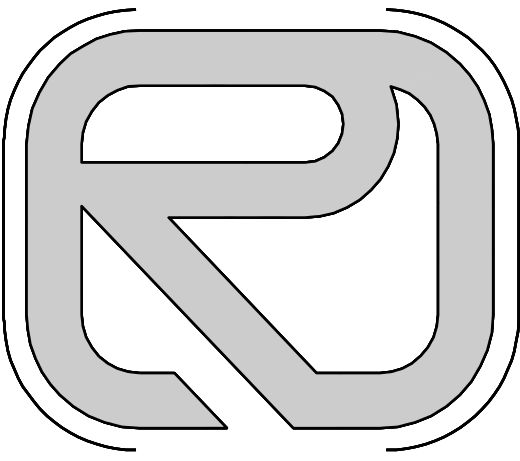
SHEET NO.  
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OF 5



**LEFT-SIDE ELEVATION**  
SCALE: 1/4"=1'-0"



**RIGHT-SIDE ELEVATION**  
SCALE: 1/4"=1'-0"



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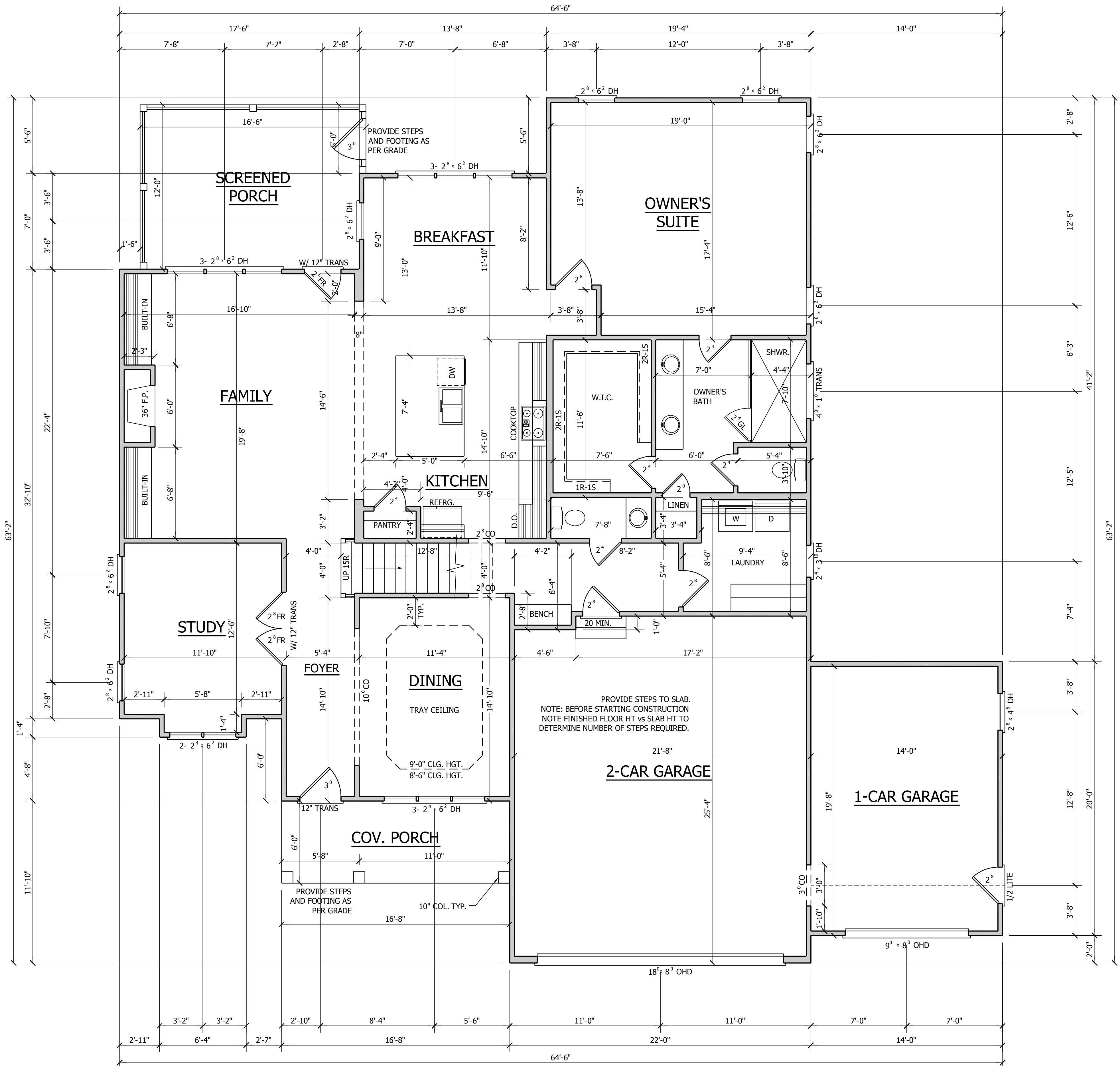
REVISIONS:

SHEET NO.

3

OF

5



FIRST FLOOR PLAN

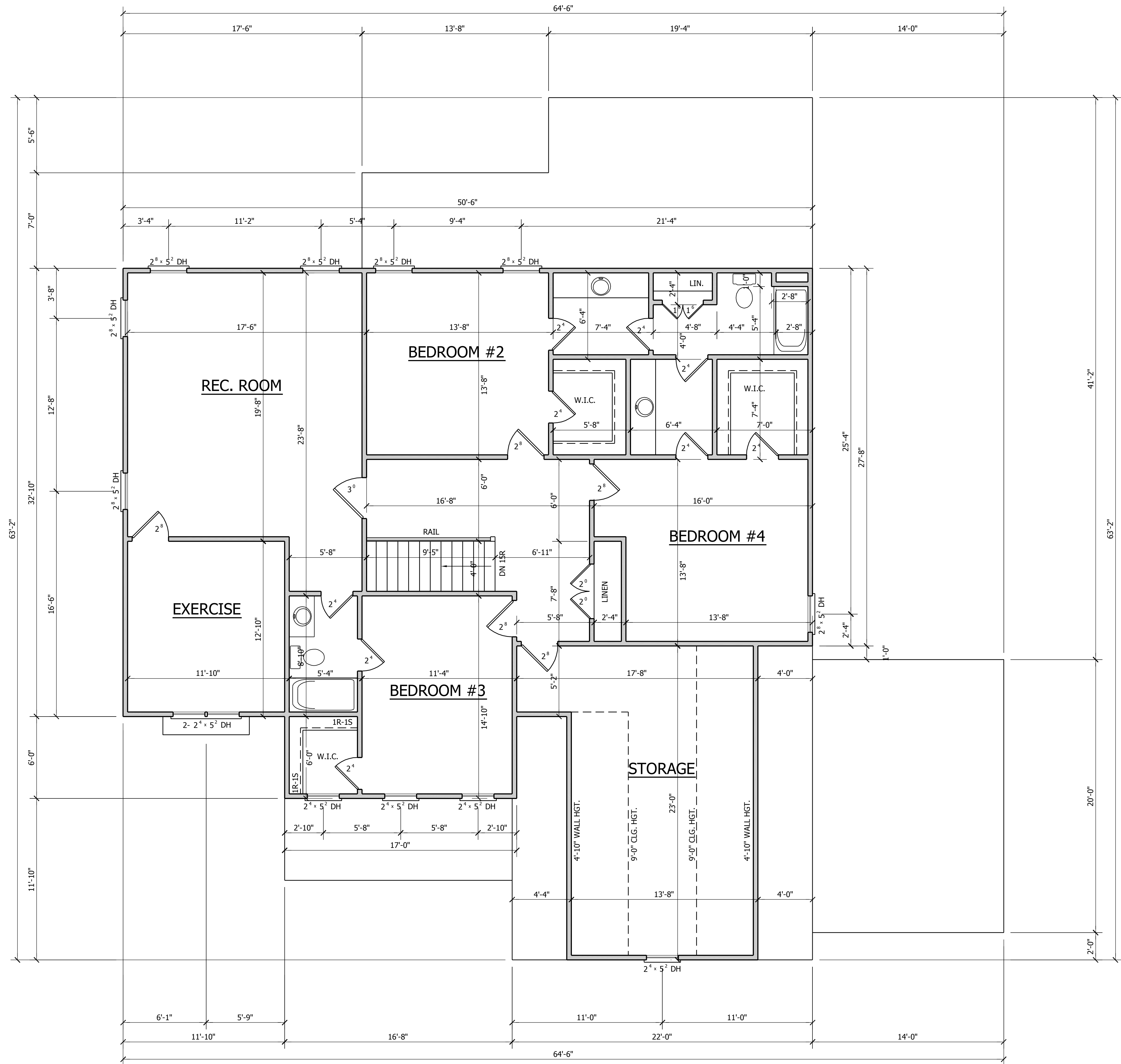
9'-0" CEILING HGT.  
SET WINDOWS @ 8'-0" A.F.F.  
SCALE= 1/4" = 1'-0"

AREA CALCULATIONS

| HEATED (SQ. FT.) |      | UNHEATED (SQ. FT.) |      | UNFINISHED (SQ. FT.) |        |
|------------------|------|--------------------|------|----------------------|--------|
| BASEMENT:        | N/A  | GARAGE:            | 828  | BASEMENT:            | N/A    |
| 1ST FLOOR:       | 1948 | SCREENED PORCH:    | 195  | REC ROOM:            | N/A    |
| 2ND FLOOR:       | 1613 | COV. PORCH:        | 100  | ATTIC:               | N/A    |
|                  |      | STORAGE:           | 341  | STORAGE:             | N/A    |
| ATTIC:           | N/A  | BRICK:             | N/A  |                      |        |
| TOTAL:           | 3561 | TOTAL:             | 1464 | OVERALL DIMENSION    |        |
| (HEATED)         |      | (UNHEATED)         |      | WIDTH:               | 64'-6" |
|                  |      |                    |      | DEPTH:               | 63'-2" |

NOTES:

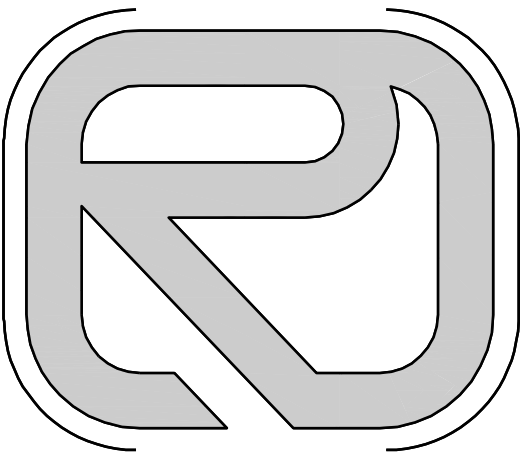
- PLANS DESIGNED UNDER 2018 NORTH CAROLINA RESIDENTIAL CODE.
- ALL ANGLED WALLS ARE 45 ° UNLESS NOTED OTHERWISE.
- FINISH DOOR AND WINDOW HEADS SHALL ALIGN EXCEPT AS NOTED.
- ALL MATERIALS AND COMPONENTS MUST BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
- GRADES SHOWN ARE ILLUSTRATIVE. NATURAL GRADE WILL DETERMINE FINISH GRADE.
- FLOOR PLAN NOTATIONS GOVERN OVER ELEVATION SCALE.
- VERIFY ALL WINDOW SIZES, RADIUS, AND DETAILS WITH CHOSEN MANUFACTURE.
- ALL HABITABLE ROOMS SHALL MEET LIGHT/VENTILATION & EGRESS REQUIREMENTS.
- TEMPERED GLASS TO BE USED AT ALL SAFETY REQUIRED LOCATIONS.
- ALL WINDOW GLAZING TO HAVE 0.35 U-FACTOR MIN.
- ALL CABINET DESIGNS/LAYOUTS TO BE VERIFIED WITH SHOP DRAWINGS FROM CABINET MANUFACTURER.
- PER 2018 N.C. RESIDENTIAL BUILDING CODE TABLE R302.6: SHEETROCK ON GARAGE CEILING TO BE 5/8" TYPE "X".



**SECOND FLOOR PLAN**  
9'-0" CEILING HGT.  
SET WINDOWS @ 8'-0" A.F.F.  
SCALE= 1/4" = 1'-0"

**NOTES:**

- PLANS DESIGNED UNDER 2018 NORTH CAROLINA RESIDENTIAL CODE.
- ALL ANGLED WALLS ARE 45 ° UNLESS NOTED OTHERWISE.
- FINISH DOOR AND WINDOW HEADS SHALL ALIGN EXCEPT AS NOTED.
- ALL MATERIALS AND COMPONENTS MUST BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
- GRADES SHOWN ARE ILLUSTRATIVE. NATURAL GRADE WILL DETERMINE FINISH GRADE.
- FLOOR PLAN NOTATIONS GOVERN OVER ELEVATION SCALE.
- VERIFY ALL WINDOW SIZES, RADIUS, AND DETAILS WITH CHOSEN MANUFACTURE.
- ALL HABITABLE ROOMS SHALL MEET LIGHT/VENTILATION & EGRESS REQUIREMENTS.
- TEMPERED GLASS TO BE USED AT ALL SAFETY REQUIRED LOCATIONS.
- ALL WINDOW GLAZING TO HAVE 0.35 U-FACTOR MIN.
- ALL CABINET DESIGNS/LAYOUTS TO BE VERIFIED WITH SHOP DRAWINGS FROM CABINET MANUFACTURER.
- PER 2018 N.C. RESIDENTIAL BUILDING CODE TABLE R302.6: SHEETROCK ON GARAGE CEILING TO BE 5/8" TYPE "X".



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PROJECT:

**LOT 1  
LANE FARMS**

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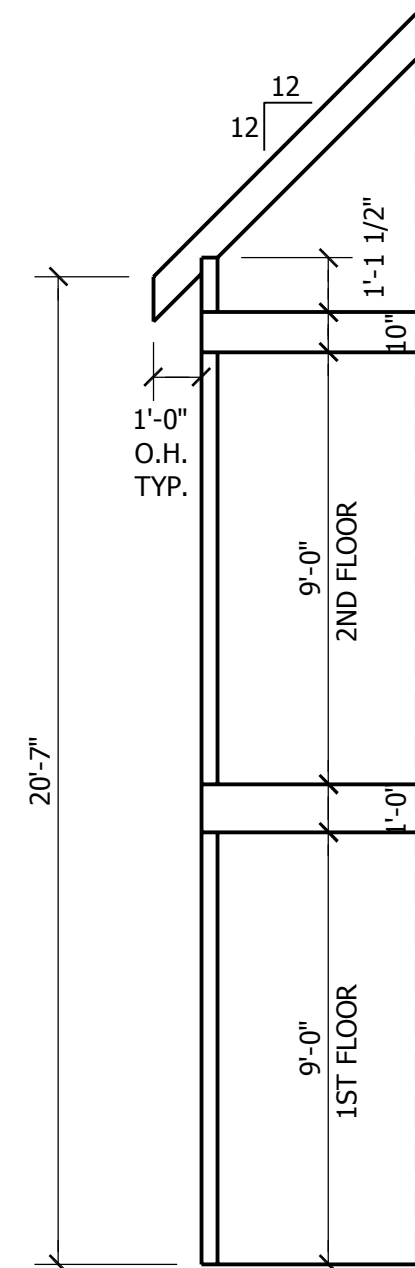
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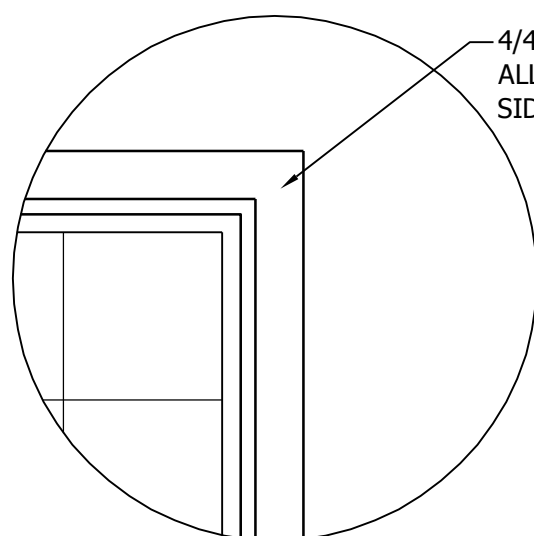
REVISIONS:

SHEET NO.

**4**  
OF 5



2-STORY SECTION @ 1/4"=1'-0"  
LEFT TO RIGHT



— 4/4 X 4 WINDOW WRAP DETAIL FOR  
ALL OTHER WINDOWS WITHIN  
SIDING UNLESS OTHERWISE NOTED

| HEATED (SQ. FT.) |      | UNHEATED (SQ. FT.) |      | UNFINISHED (SQ. FT.) |        |
|------------------|------|--------------------|------|----------------------|--------|
| BASEMENT:        | N/A  | GARAGE:            | 828  | BASEMENT:            | N/A    |
| 1ST FLOOR:       | 1948 | SCREENED PORCH:    | 195  | REC ROOM:            | N/A    |
| 2ND FLOOR:       | 1613 | COV. PORCH:        | 100  | ATTIC:               | N/A    |
|                  |      | STORAGE:           | 341  | STORAGE:             | N/A    |
| ATTIC:           | N/A  | BRICK:             | N/A  |                      |        |
| TOTAL:           | 3561 | TOTAL:             | 1464 | OVERALL DIMENSION    |        |
| (HEATED)         |      | (UNHEATED)         |      | WIDTH:               | 64'-6" |
|                  |      |                    |      | DEPTH:               | 63'-2" |

$$\frac{2958}{150} \text{ SQ.FT.} = \frac{19.72}{150} \text{ SQ. FT. OF TOTAL ROOF VENTILATION REQ'D}$$

$$\frac{273-.47}{.035} \text{ (LINEAR FT. OF SOFFIT) X } = \frac{9.57}{.035} \text{ SQ. FT. OF AVAILABLE SOFFIT VENT (NET FREE AREA PER FT.)}$$

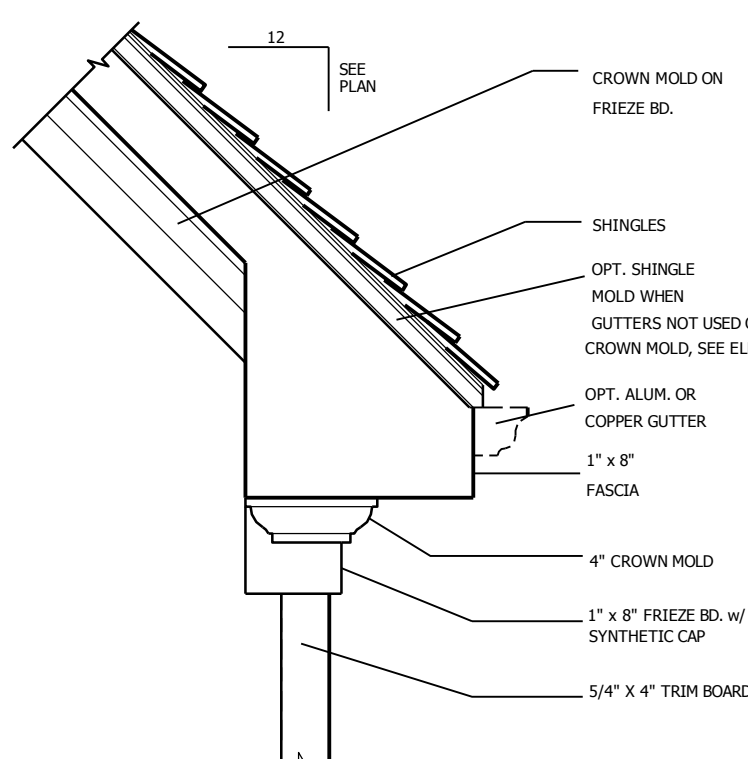
$$\frac{19.72}{.125} - 9.57 = \frac{10.15}{.125} \text{ SQ.FT. REMAINING REQ'D ROOF VENTILATION}$$

$$\frac{10.15}{.125} \text{ SQ.FT.} = \frac{81.2}{.125} \text{ LINEAR FT. OF RIDGE VENT REQ'D (NET FREE AREA PER FT.)}$$

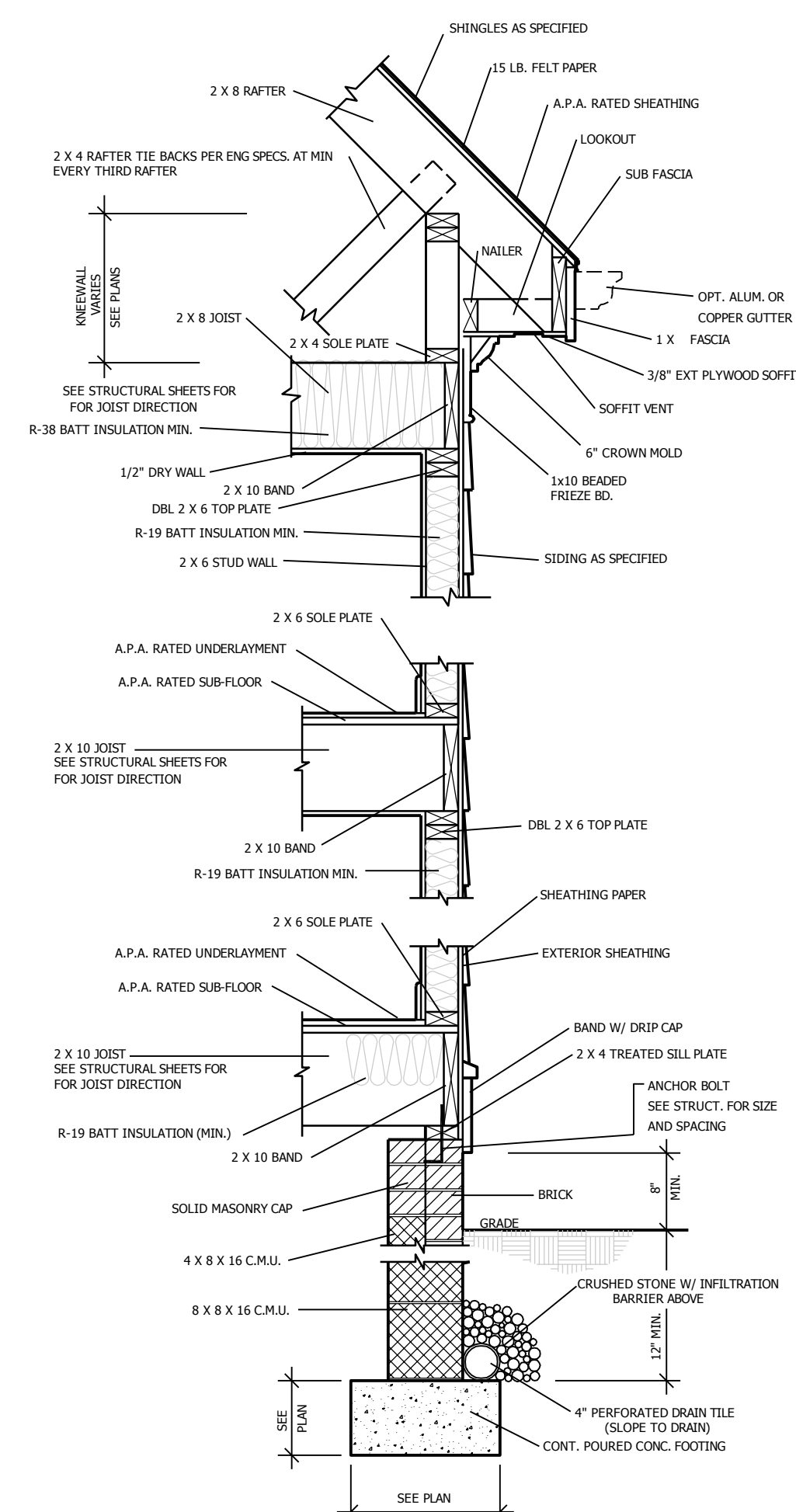
NOTE: FIGURE BASED ON SECTION R-806 OF THE 2018 IRC.  
 NOTE: - SOFFIT VENT SPECS BASED ON HARDISOFFIT PANELS THAT ALLOWS 5 SQ. IN. OF NET FREE AREA PER LINEAR FT.  
 - RIDGE VENT SPECS BASED ON TURBVENTUR PLUS THAT ALLOWS 18 SQ. IN. OF NET FREE AREA PER LINEAR FT.

TOTAL NET FREE VENTILATING AREA IS PERMITTED TO BE REDUCED TO 1 TO 300:

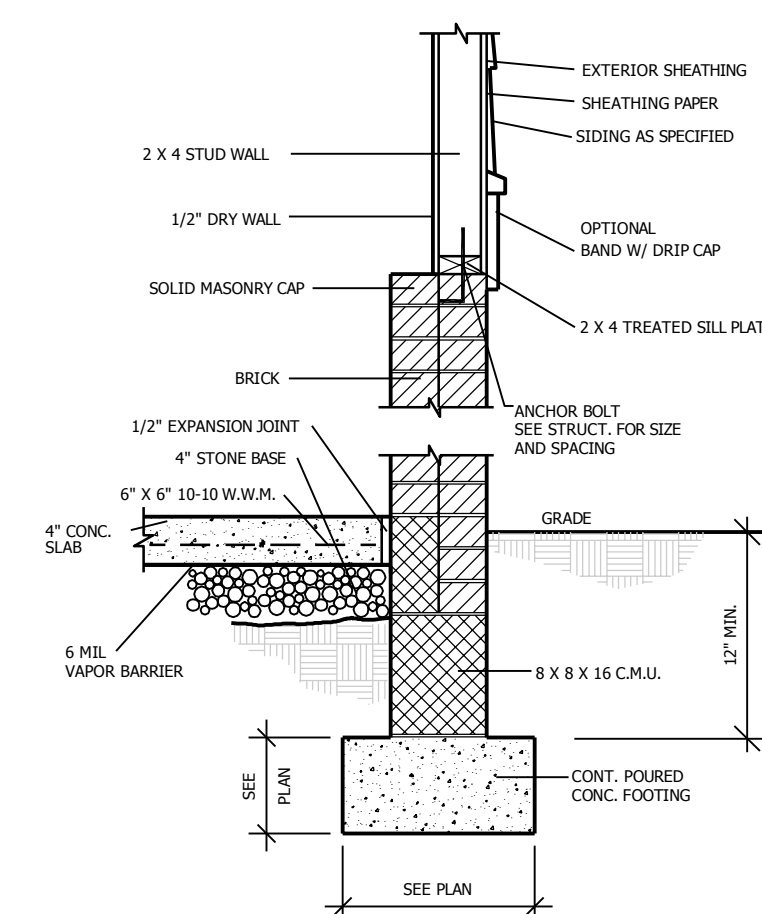
- 1 PROVIDED AT LEAST 50% AND NOT MORE THAN 80% OF THE REQ'D VENTILATING AREA IS PROVIDED BY VENTILATORS. REFERENCE R806.2 OF THE 2018 IRC. FOR PROPER LOCATION.
- 2 WHEN AN APPROVED VAPOR BARRIER HAVING A TRANSMISSION RATE NOT EXCEEDING 1 PERM IS INSTALLED ON THE WARM SIDE OF THE CEILING



BOXING RETURN DETAIL @ 3/4"=1'-0"



TWO STORY WALL W/ SIDING @ 3/4"=1'-0"  
DESIGNED FOR 115 MPH WINDS



GARAGE WALL W/ SIDING @ 3/4"=1'-0"  
DESIGNED FOR 115 MPH WINDS

$$\frac{1943 \text{ SQ. FT.}}{150} = 12.95 \text{ SQ. FT. VENT REQ'D.}$$
$$\frac{12.95 \text{ SQ. FT.}}{.56} = 23 \text{ VENTS TO BE PROVIDED}$$

NOTE: FIGURE BASED ON SECTION R-408 OF THE 2018 IRC.  
NOTE: FND VENT SPECS BASED ON PUSH/PULL POLYPROPYLENE FND.  
VENT THAT ALLOWS 72 SQ. IN. OF NET FREE AREA PER VENT.

- ① WHERE CONTINUOUS OPERATED MECHANICAL VENTILATION IS PROVIDED AT A RATE OF 1.0 CFM FOR EACH 50 SQ. FT. OF CRAWL SPACE.
- ② THE CRAWL SPACE IS SUPPLIED WITH CONDITIONED AIR AND THE PERIMETER WALLS ARE INSULATED IN ACCORDANCE WITH SECTION R408.3 OF THE 2018 IRC.
- ③ BUILDER/OWNER TO VERIFY VENT SIZE AND REQUIREMENTS PRIOR TO CONSTRUCTION.  
SEE SECTION R408.1 AND R408.2 OF THE 2018 IRC.

PLANS DESIGNED TO THE 2018 NORTH CAROLINA RESIDENTIAL CODE

HOUSE DESIGNED FOR 115 MPH 3 SECOND GUST , EXPOSURE B

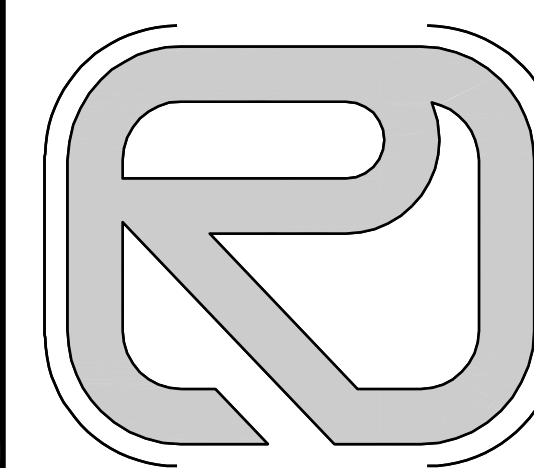
ANCHOR BOLTS TO BE NO MORE THAN 6' O.C. AND WITHIN 12" OF ALL PLATES SPLICES

ANCHOR BOLTS SHALL BE MIN. 1/2" DIAMETER & SHALL EXTEND A MINIMUM 7"

INTO MASONRY OR CONCRETE

COMPONENT & CLADDING DESIGNED FOR THE FOLLOWING LOADS

| MEAN ROOF HEIGHT | UP TO 30'   | 30'-1" - 35' | 35'-1" - 40' | 40'-1" - 45' |
|------------------|-------------|--------------|--------------|--------------|
| ZONE 1           | 16.5, -18.0 | 17.3, -18.9  | 18.0, -19.6  | 18.5, -20.2  |
| ZONE 2           | 16.5, -21.0 | 17.3, -22.1  | 18.0, -22.9  | 18.5, -23.5  |
| ZONE 3           | 16.5, -21.0 | 17.3, -22.1  | 18.0, -22.9  | 18.5, -23.5  |
| ZONE 4           | 18.0, -19.5 | 18.9, -20.5  | 19.6, -21.3  | 20.2, -21.8  |
| ZONE 5           | 18.0, -24.1 | 18.9, -25.3  | 19.6, -26.3  | 20.2, -27.0  |



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LOT 1  
LANE FARMS

**STEPHENSON  
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08-06-25

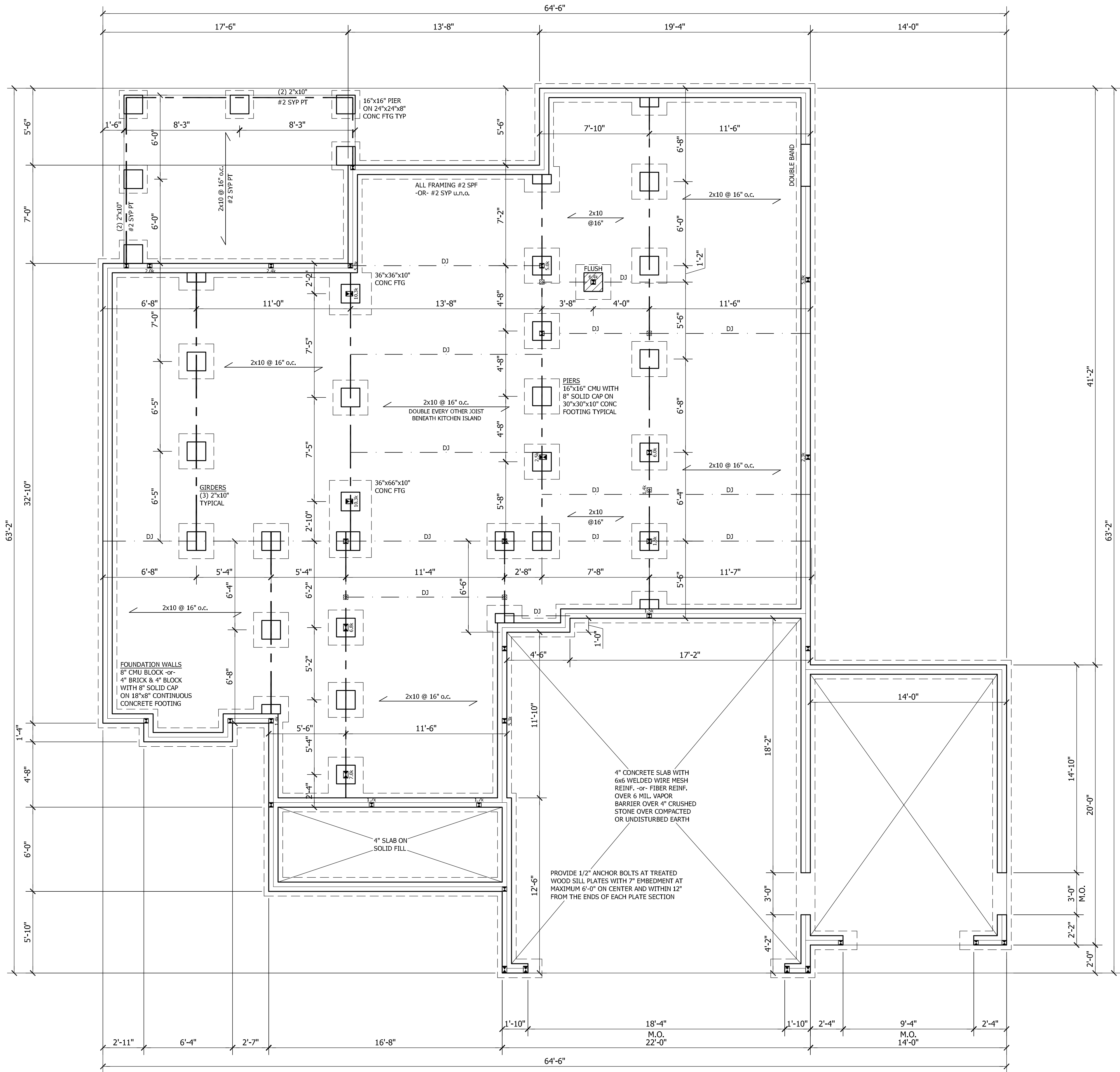
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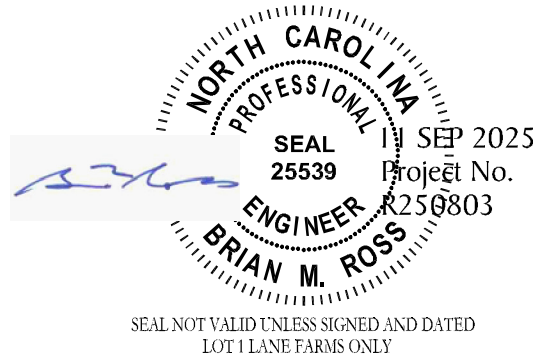
SHEET NO.

OF

5



FOUNDATION & FIRST FLOOR FRAMING  
SCALE: 1/4" = 1'-0"



STRUCTURAL DESIGN IN ACCORDANCE WITH: NORTH CAROLINA STATE RESIDENTIAL CODE 2018 EDITION IRC

ENGINEER'S SEAL APPLIES TO STRUCTURAL COMPONENTS ONLY AND DOES NOT CERTIFY ARCHITECTURAL LAYOUT OR DIMENSIONAL ACCURACY. SEAL APPLIES ONLY FOR LOT NUMBER INDICATED AND SIGNED PLANS MAY NOT BE COPIED. FAILURE TO NOTIFY THE ENGINEER OF ADDITIONAL USE OF THE PLANS WILL VOID THE LIABILITY OF ROSS LINDEN ENGINEERS PC.

WALL BRACING NOTES:

WALL BRACING SHALL BE IN ACCORDANCE WITH SECTION R602.10.3 CONTINUOUS SHEATHING. BRACING METHOD CS-WSP SHALL BE USED IN ACCORDANCE WITH TABLE R602.10.1.

THE REQUIRED LENGTH OF BRACING FOR EACH SIDE OF A RECTANGLE CIRCUMSCRIBED AROUND THE PLAN OR A PORTION OF THE PLAN AT EACH STORY LEVEL SHALL BE IN ACCORDANCE WITH TABLE R602.10.3 AND FIGURE R60.10.3(1). UNLESS NOTED OTHERWISE, THE ENTIRE STRUCTURE IS ASSUMED TO CIRCUMSCRIBE WITHIN A SINGLE RECTANGLE.

MINIMUM PANEL WIDTH IS 24". SEE SECTION R602.10.3 FOR ADDITIONAL INFORMATION. CONNECTION CRITERIA SHALL BE IN ACCORDANCE WITH TABLE R602.10.1. PORTAL FRAME CONSTRUCTION SHALL BE IN ACCORDANCE WITH FIGURE R602.10.1.

HOLD DOWN DEVICE SHALL BE AS FOLLOWS:  
SIMPSON LSTA24 STRAP (OR EQUIVALENT) BETWEEN FLOORS EXTENDING FROM BOTTOM OF FLOOR BAND UP STUDS WHERE SHOWN.  
SIMPSON HD3B HOLDOWN (OR EQUIVALENT) WHERE REQUIRED TO CONNECT DIRECTLY TO FOUNDATION.

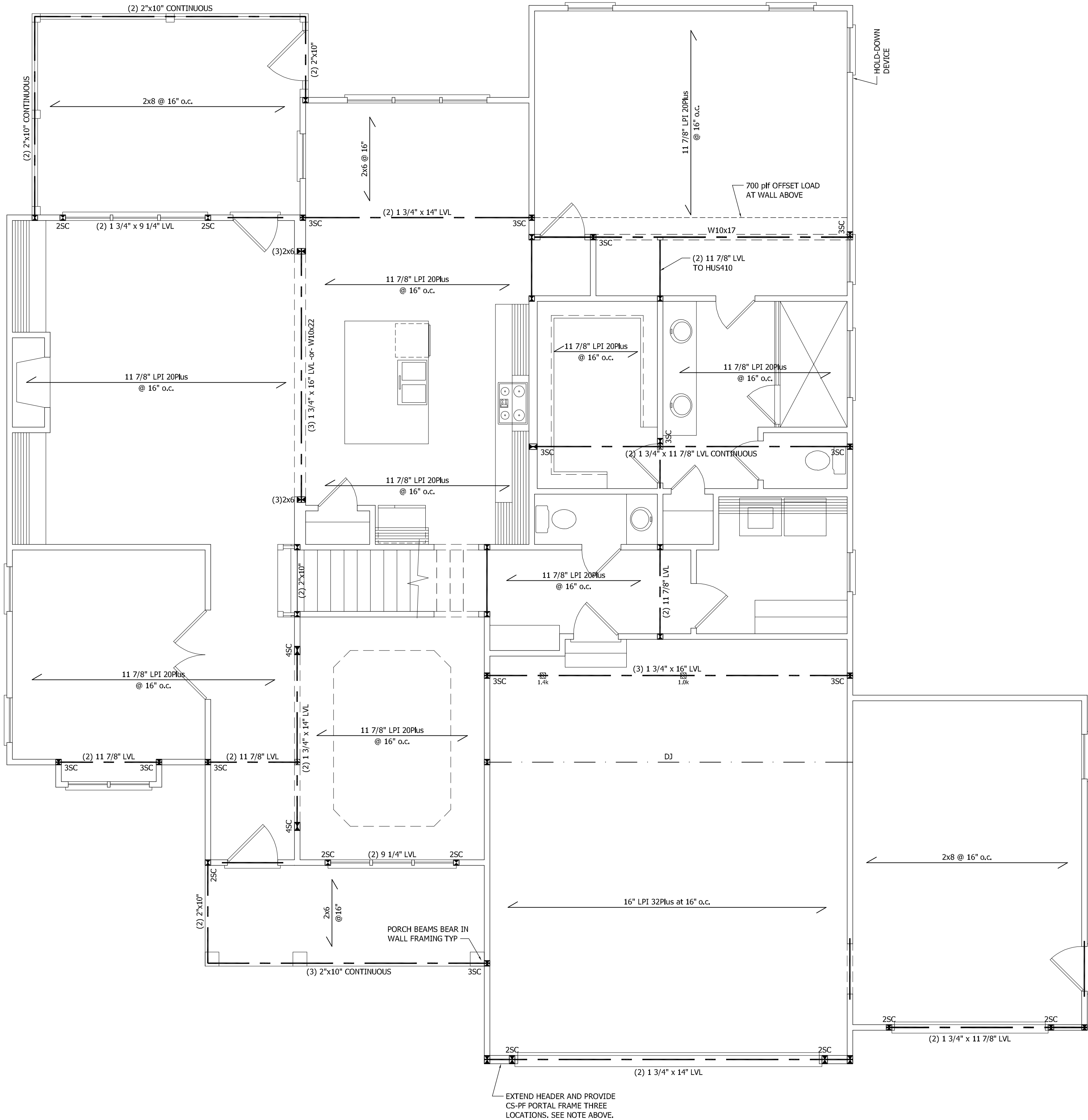
WIND SPEED: 115 mph

EAVE TO RIDGE HEIGHT: 14.5 ft

FIRST FLOOR:

SHORT SIDE LENGTH OF CIRCUMSCRIBED RECTANGLE: 63.17 ft  
REQUIRED LENGTH OF BRACING = 16.9 ft  
PROVIDED LENGTH OF BRACING = 17.67 ft

LONG SIDE LENGTH OF CIRCUMSCRIBED RECTANGLE: 64.5 ft  
REQUIRED LENGTH OF BRACING = 17.5 ft  
PROVIDED LENGTH OF BRACING = 26.17 ft



FIRST CEILING FRAMING

SCALE: 1/4" = 1'-0"

FRAMING NOTES

1. STRUCTURAL NOTES SHEET S5.
2. FRAMING SHALL BE #2 SPF OR #2 SYP OR BETTER WITH A MINIMUM  $F_b = 800$  psi
3. EXTERIOR AND BEARING HEADERS (2) 2"x10" u.p.d.
4. DENOTES POINT LOAD, SEE CONSTRUCTION NOTE #4 ON S5.

FRAMING SYSTEM

JOIST LAYOUT AND PLACEMENT BY MANUFACTURER TO COINCIDE WITH THE SUPPORT LOCATIONS SHOWN. JOISTS SHALL BE DESIGNED FOR MAXIMUM L/480 LIVE LOAD DEFLECTION. JOIST LAYOUT SHALL BE PROVIDED FOR REVIEW AND COORDINATED WITH THE ENGINEER OF RECORD. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

EXTEND HEADER AND PROVIDE CS-PF PORTAL FRAME PANEL PER FIG. R602.10.1. PROVIDE LSTA24 STRAP (OR EQUIVALENT) EACH SIDE AS SHOWN. FASTEN SHEATHING TO HEADER AND WALL FRAMING (EACH STUD) WITH 8d NAILS AT 3" o.c. AS SHOWN. SEE FIG. R602.10.1 FOR ADDITIONAL REQUIREMENTS. SEE SHEET S5 FOR DETAIL.



STRUCTURAL DESIGN IN ACCORDANCE WITH: NORTH CAROLINA STATE RESIDENTIAL CODE 2018 EDITION IRC

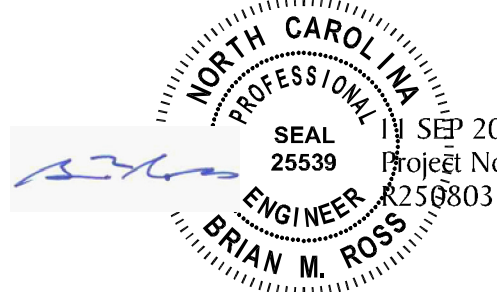
ENGINEER'S SEAL APPLIES TO STRUCTURAL COMPONENTS ONLY AND DOES NOT CERTIFY ARCHITECTURAL LAYOUT OR DIMENSIONAL ACCURACY. SEAL APPLIES ONLY FOR LOT NUMBER INDICATED AND SIGNED PLANS MAY NOT BE COPIED. FAILURE TO NOTIFY THE ENGINEER OF ADDITIONAL USE OF THE PLANS WILL VOID THE LIABILITY OF ROSS LINDEN ENGINEERS PC.

NOTE:  
PER SECTION R602.10.3.2, THE AMOUNT OF BRACING PROVIDED  
ON THE SECOND STORY EQUALS OR EXCEEDS THE AMOUNT OF  
BRACING FOR THE FIRST STORY BELOW, THEREFORE A SEPARATE  
ANALYSIS OF SECOND STORY BRACING IS NOT REQUIRED.

1. STRUCTURAL NOTES SHEET SS.
2. FRAMING SHALL BE #2 SPF OR #2 SYP OR BETTER WITH A MINIMUM  $F_b = 800$  psi
3. EXTERIOR AND BEARING HEADERS (2) 2"x10" u.n.o.
4. ☒ DENOTES POINT LOAD. SEE CONSTRUCTION NOTE #4 ON SS.



SCALE: 1/4" = 1'-0"



SEAL NOT VALID UNLESS SIGNED AND DATED  
LOT 11 LANE FARMS ONLY

STRUCTURAL DESIGN IN ACCORDANCE  
WITH: NORTH CAROLINA STATE  
RESIDENTIAL CODE 2018 EDITION IRC

ENGINEER'S SEAL APPLIES TO STRUCTURAL COMPONENTS ONLY AND DOES NOT CERTIFY ARCHITECTURAL LAYOUT OR DIMENSIONAL ACCURACY. SEAL APPLIES ONLY FOR LOT NUMBER INDICATED AND SIGNED PLANS MAY NOT BE COPIED. FAILURE TO NOTIFY THE ENGINEER OF ADDITIONAL USE OF THE PLANS WILL VOID THE LIABILITY OF ROSS LINDEN ENGINEERS PC.

# ROSS LINDEN ENGINEERS P C

709 W. JONES STREET  
RALEIGH, NC 27603  
TEL 919.832.5680  
WWW.ROSSLINDEN.COM

ROSS LINDEN ENGINEERS PC ASSUMES NO LIABILITY FOR CHANGES OR MODIFICATIONS MADE TO THESE PLANS BY OTHERS, OR FOR CONSTRUCTION METHODS, OR FOR ANY DEVIATION FROM THESE PLANS.

PLAN ENGINEERING REMAINS THE PROPERTY OF ROSS LINDEN ENGINEERS PC AND ANY UNAUTHORIZED USE OR DUPLICATION IN WHOLE OR PART IS STRICTLY PROHIBITED. THESE DRAWINGS ARE OFFERED TO THE CLIENT FOR A CONDITIONAL ONE TIME USE. THE CONDITIONAL USE IS LIMITED TO THE LOT OR PROPERTY AS SPECIFIED HEREIN, AND ONLY FOR THE SAID LOCATION.

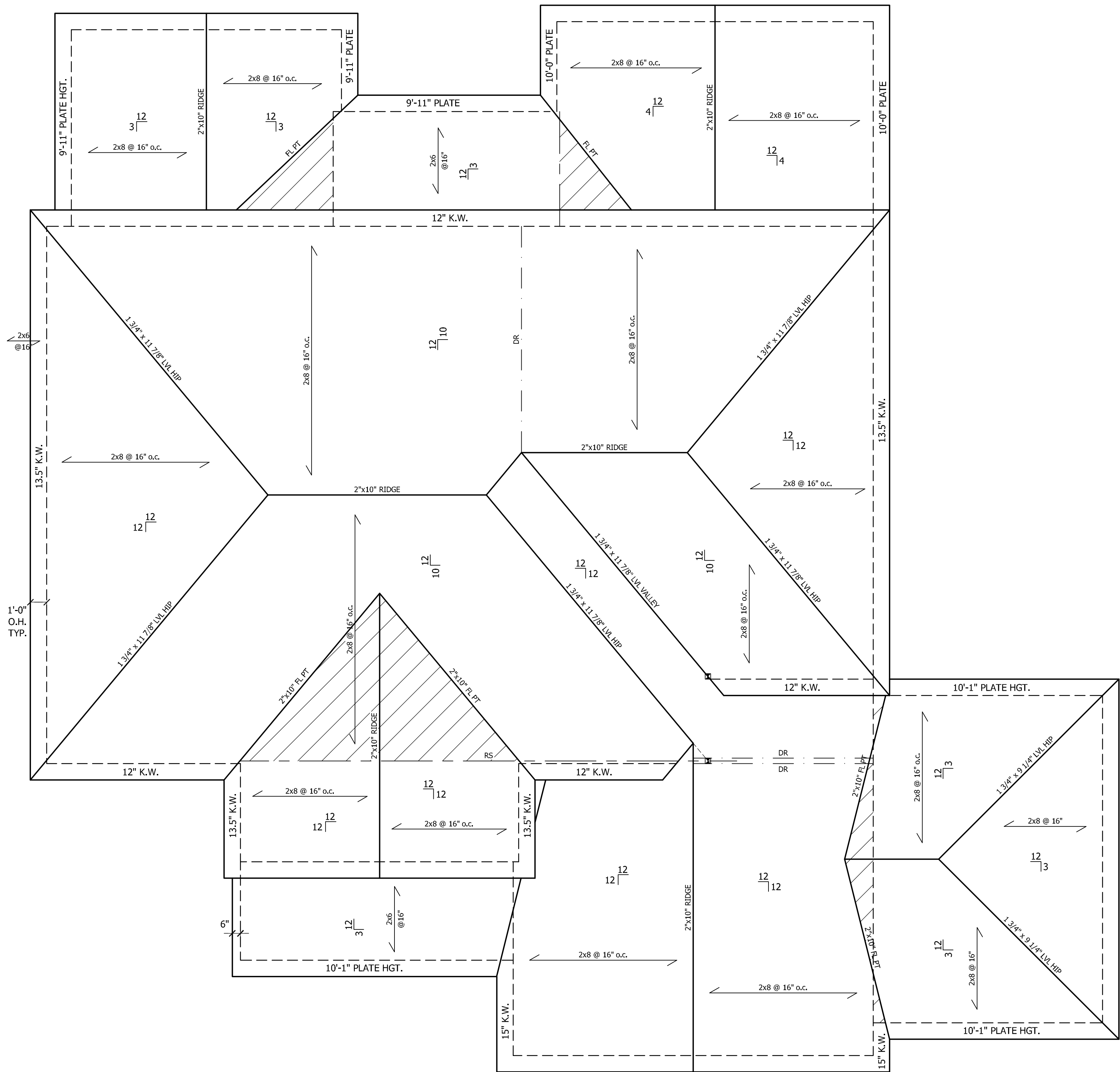
STEPHENSON BUILDERS  
LOT 1 LANE FARMS

DRAWN BY: LR  
DATE: 10 SEP 25

R250803

## SECOND CEILING FRAMING

S3 OF S5



ROOF PLAN FRAMING  
SCALE: 1/4" = 1'-0"

ROOF FRAMING NOTES

1. STRUCTURAL NOTES SHEET S5.
2. FRAMING SHALL BE #2 SPF OR #2 SYP OR BETTER WITH A MINIMUM Fb = 800 psi
3. PROVIDE 2x4 COLLAR TIES AT 48" o.c. AT UPPER THIRD OF RAFTERS u.n.o. ON PLAN.
4. FUR RIDGES FOR FULL RAFTER CONTACT
5.  DENOTES POINT LOAD. SEE CONSTRUCTION NOTE #4 ON S5.
6.  DENOTES OVERFRAMED AREA



STRUCTURAL DESIGN IN ACCORDANCE  
WITH: NORTH CAROLINA STATE  
RESIDENTIAL CODE 2018 EDITION IRC

ENGINEER'S SEAL APPLIES TO STRUCTURAL  
COMPONENTS ONLY AND DOES NOT  
CERTIFY ARCHITECTURAL LAYOUT OR  
DIMENSIONAL ACCURACY.  
SEAL APPLIES ONLY FOR LOT NUMBER  
INDICATED AND SIGNED PLANS MAY NOT BE  
COPIED. FAILURE TO NOTIFY THE ENGINEER  
OF ADDITIONAL USE OF THE PLANS WILL  
VOID THE LIABILITY OF ROSS LINDEN  
ENGINEERS PC.

## STRUCTURAL NOTES

## GENERAL

1. ENGINEER'S SEAL APPLIES TO STRUCTURAL COMPONENTS ONLY AND DOES NOT CERTIFY ARCHITECTURAL LAYOUT OR DIMENSIONAL ACCURACY. ROSS LINDEN ENGINEERS P.C. ASSUMES NO LIABILITY FOR CHANGES OR MODIFICATIONS MADE TO THESE PLANS BY OTHERS, OR FOR CONSTRUCTION METHODS, OR FOR ANY DEVIATION FROM THE PLANS.

2. ALL CONSTRUCTION, WORKMANSHIP, MATERIAL QUALITY AND SELECTION SHALL BE IN ACCORDANCE WITH THE NORTH CAROLINA STATE BUILDING CODE - RESIDENTIAL CODE 2018 EDITION FROM THE INTERNATIONAL RESIDENTIAL CODE 2015 (IRC), AND LOCAL CODES AND REGULATIONS. DIMENSIONS SHALL GOVERN OVER SCALE AND CODE SHALL GOVERN OVER DIMENSIONS.

3. CONTACT THE ENGINEER PRIOR TO CONSTRUCTION IF ANY DISCREPANCIES ARE NOTED ON THE PLANS.

4. ONLY CURRENT SEALED DRAWINGS ARE TO BE USED FOR CONSTRUCTION.

## DESIGN LOADS

| TABLE R301.4              | LIVE LOAD<br>(PSF) | DEAD LOAD<br>(PSF) |
|---------------------------|--------------------|--------------------|
| DWELLING UNITS            | 40                 | 10                 |
| SLEEPING ROOMS            | 30                 | 10                 |
| ATTICS WITH STORAGE       | 20                 | 10                 |
| ATTICS WITHOUT STORAGE    | 10                 | 10                 |
| ROOF SNOW                 | 20                 | 10                 |
| STAIRS                    | 40                 | 10                 |
| DECKS                     | 40                 | 10                 |
| EXTERIOR BALCONIES        | 60                 | 10                 |
| PASSENGER VEHICLE GARAGES | 50                 | -                  |
| FIRE ESCAPES              | 40                 | 10                 |
| GUARDRAILS AND HANDRAILS  | 200                | -                  |

## ADDITIONAL LOADS

TABLE R301.2(4) - BASIC DESIGN WIND SPEED 115 MPH

TABLE R301.2(7) - SEISMIC DESIGN CATEGORY B

TABLE R301.2(6) - DESIGN POSITIVE AND NEGATIVE PRESSURE FOR DOORS AND WINDOW FOR A MEAN ROOF HEIGHT OF 35 FEET OR LESS SHALL BE 25 PSF

TABLE R301.2(2) - COMPONENT AND CLADDING LOADS FOR A BUILDING LOCATED IN EXPOSURE B

ROOF VALUES BOTH POSITIVE AND NEGATIVE SHALL BE DESIGNED BASED ON ROOF PITCHES AND MEAN ROOF HEIGHT AS FOLLOWS:

| ROOF PITCH      | 0-30 FT  | 35 FT    | 40 FT    |
|-----------------|----------|----------|----------|
| 0:12 TO 2.25:12 | 45.4 PSF | 47.7 PSF | 49.5 PSF |
| 2.25:12 TO 7:12 | 54.9 PSF | 56.5 PSF | 57.9 PSF |
| 7:12 TO 12:12   | 61.0 PSF | 62.1 PSF | 62.9 PSF |

WALL CLADDING SHALL BE DESIGNED FOR A 24.1 PSF POSITIVE AND NEGATIVE PRESSURE

## MATERIALS

1. FRAMING LUMBER SHALL BE #2 SPRUCE PINE FIR (SPF) OR #2 SOUTHERN YELLOW PINE (SYP) OR BETTER WITH THE FOLLOWING MINIMUM DESIGN PROPERTIES:  
F<sub>b</sub> = 800 PSI F<sub>v</sub> = 135 PSI E = 1,466 PSI

2. FRAMING LUMBER EXPOSED TO WEATHER OR IN CONTACT WITH THE GROUND, CONCRETE OR MASONRY SHALL BE #2 SOUTHERN YELLOW PINE (SYP) TREATED IN ACCORDANCE WITH ANPA C22 WITH THE FOLLOWING MINIMUM DESIGN PROPERTIES:  
F<sub>b</sub> = 800 PSI F<sub>v</sub> = 175 PSI E = 1,466 PSI

3. ENGINEERED WOOD BEAMS SHALL BE LAMINATED VENEER LUMBER (LVL) OR PARALLEL STRAND LUMBER (PSL) WITH THE FOLLOWING MINIMUM DESIGN PROPERTIES:  
F<sub>b</sub> = 2600 PSI F<sub>v</sub> = 285 PSI E = 1,966 PSI  
THE FOLLOWING PRODUCTS MEET OR EXCEED THE ABOVE SPECIFICATIONS AND MAY BE USED AT THE LOCATION INDICATED ON THE PLANS:  
BROADSPAN 1.9E-2750F LVL BY GEORGIA PACIFIC  
LEVEL TRUS JOIST 1.9E MICROLLAM LVL BY WEYERHAEUSER

4. STRUCTURAL STEEL WIDE FLANGE BEAMS SHALL CONFORM TO ASTM A992 OR A572, GRADE 50. ALL OTHER STRUCTURAL STEEL SHALL CONFORM TO ASTM A36.

5. BOLTS SHALL CONFORM TO A325 MINIMUM GRADE.

6. REBAR SHALL BE DEFORMED STEEL CONFORMING TO ASTM A615 GRADE 60.

7. SEE TABLE R602.3(1) FOR STRUCTURAL MEMBER FASTENING REQUIREMENTS.

8. POURED CONCRETE SHALL HAVE A MINIMUM SPECIFIED COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS. MATERIALS USED TO PRODUCE CONCRETE SHALL COMPLY WITH THE APPLICABLE STANDARDS LISTED IN ACI 318 OR ASTM C 1157.

9. CONCRETE LOCATED PER TABLE R402.2 SHALL BE AIR ENTRAINED WITH THE TOTAL AIR CONTENT NOT LESS THAN 5 PERCENT OR MORE THAN 7 PERCENT.

10. MASONRY UNITS SHALL CONFORM TO ACI 530/ASCE 5/TMS 402 AND MORTAR SHALL COMPLY WITH ASTM C 270.

## CONSTRUCTION

1. STEEL BEAMS SHALL BE SUPPORTED AT EACH END WITH A MINIMUM BEARING LENGTH OF 3 1/2" AND FULL FLANGE WIDTH. BEAMS MUST BE ANCHORED AT EACH END WITH A MINIMUM OF FOUR 16d NAILS OR TWO 1/2" x 4" LAG SCREWS.

2. ENGINEERED WOOD BEAMS SHALL BE INSTALLED WITH ALL CONNECTIONS PER MANUFACTURER'S INSTRUCTIONS.

3. ALL BEAMS SHALL BE CONTINUOUSLY SUPPORTED Laterally AND SHALL BEAR FULL WIDTH ON THE SUPPORTING WALLS OR COLUMNS INDICATED WITH A MINIMUM OF THREE STUDS.

4. SOLID BLOCKING SHALL BE PROVIDED AT ALL POINT LOADS TO TRANSFER LOADS THROUGH FLOOR LEVELS. COLUMNS SHALL BE CONTINUOUS TO THE FOUNDATION OR TO OTHER STRUCTURAL ELEMENTS.

5. ENGINEERED WOOD FLOOR SYSTEMS AND ROOF TRUSS SYSTEMS SHALL BE PROVIDED FOR REVIEW AND COORDINATED WITH THE ENGINEER OF RECORD. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. ROOF TRUSS DRAWINGS SHALL BE SIGNED AND SEALED BY THE MANUFACTURER AND REVIEWED BY THE ENGINEER OF RECORD PRIOR TO CONSTRUCTION.

6. WALL BRACING REQUIREMENTS SHALL BE IN ACCORDANCE WITH SECTION R602.10 OF THE NORTH CAROLINA RESIDENTIAL CODE.

A. EXTERIOR WALLS ARE ASSUMED TO BE BRACED WALL LINES. ADDITIONAL INTERIOR WALLS MAY ALSO BE USED AS BRACED WALL LINES WHERE APPLICABLE. SEE PLAN FOR LOCATIONS.

B. THE EXTERIOR OF THE STRUCTURE SHALL BE CONTINUOUSLY SHEATHED WITH 1/2" WOOD STRUCTURAL SHEATHING (PLYWOOD OR OSB) PER CODE SECTION R602.10.3. EXTERIOR BRACED WALL LINES ARE ASSUMED TO BE BRACED WITH CS-WSP (WOOD STRUCTURAL PANEL) BRACED WALL PANELS. ALTERNATE BRACING METHODS, IF USED, MUST BE INSTALLED IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF THE CODE AND MUST BE REVIEWED BY THE ENGINEER PRIOR TO CONSTRUCTION.

C. INTERIOR BRACED WALL LINES ARE CONSIDERED TO BE BRACED WITH 1/2" GB (GYPSUM BOARD) BRACED WALL PANELS. SEE TABLE R602.10.2 FOR CONNECTION CRITERIA.

D. SEE PLANS FOR SPECIAL WALL BRACING REQUIREMENTS FOR GARAGE WALLS AND OTHER WALLS WITH MULTIPLE OR LARGE OPENINGS.

7. STEEL FLITCH BEAMS SHALL BE FASTENED TOGETHER WITH 1/2" DIAMETER BOLTS WITH WASHERS PLACED UNDER THE THREADED END OF THE BOLT. BOLTS SHALL BE SPACED AT MAXIMUM 24" o.c. STAGGERED TOP AND BOTTOM OF BEAM WITH A MINIMUM 2" EDGE DISTANCE. TWO BOLTS SHALL BE LOCATED AT 6" FROM EACH END OF FLITCH BEAM.

8. BRICK LINTELS SHALL BE 3 1/2 x 3 1/2 x 1/4 STEEL ANGLE FOR UP TO 6'-0" MAXIMUM SPAN AND 6 x 4 x 5/16 FOR SPANS GREATER THAN 6'-0".

9. BRICK LINTELS AT SLOPED AREAS SHALL BE 4 x 3 1/2 x 1/4 STEEL ANGLE WITH 16d NAILS IN 3/16" HOLES IN 4" ANGLE LEG AT 12" o.c. TO TRIPLE RAFTER. WHEN THE SLOPE EXCEEDS 4:12 A MINIMUM OF 3 x 3 x 1/4 PLATES SHALL BE WELDED AT 24" o.c. ALONG THE STEEL ANGLE.

## FOUNDATION

1. MINIMUM ALLOWABLE SOIL BEARING CAPACITY IS ASSUMED TO BE 3000 PSF. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY SOIL BEARING CAPACITY.

2. CONCRETE AND MASONRY FOUNDATION WALLS SHALL BE SELECTED AND CONSTRUCTED IN ACCORDANCE WITH THE PROVISIONS OF SECTION R404 OR IN ACCORDANCE WITH ACI 318, NCMA TR-68-A, OR ACI 530/ASCE 5/TMS 402.

3. MASONRY AND POURED CONCRETE WALL REINFORCEMENT SHALL BE IN ACCORDANCE WITH TABLE R404.1.1 (1 THROUGH 4) OF THE NORTH CAROLINA RESIDENTIAL CODE.

A. PER R404.1.1, TABLES ASSUME THAT WALLS HAVE PERMANENT LATERAL SUPPORT AT THE TOP AND BOTTOM.

B. WALL REINFORCING SHALL BE PLACED ACCORDING TO FOOTNOTE (c) OF THE TABLES (REINFORCING IS NOT CENTERED IN WALL).

C. FOUNDATION DRAINS ARE ASSUMED AT ALL WALLS PER R405.

4. WOOD SILL PLATES SHALL BE ANCHORED TO THE FOUNDATION WITH 1/2" ANCHOR BOLTS WITH MINIMUM 7" EMBEDMENT SPACED A MAXIMUM OF 6'-0" o.c. AND WITHIN 12" FROM THE ENDS OF EACH PLATE SECTION.

5. THE UNSUPPORTED HEIGHT OF SOLID MASONRY PIERS SHALL NOT EXCEED TEN TIMES THEIR LEAST DIMENSION. UNFILLED HOLLOW PIERS MAY BE USED IF THE UNSUPPORTED HEIGHT IS NOT MORE THAN FOUR TIMES THEIR LEAST DIMENSION.

6. CENTERS OF PIERS SHALL BEAR IN THE MIDDLE THIRD OF THE FOOTINGS, AND GIRDSERS SHALL CENTER IN THE MIDDLE THIRD OF THE PIERS.

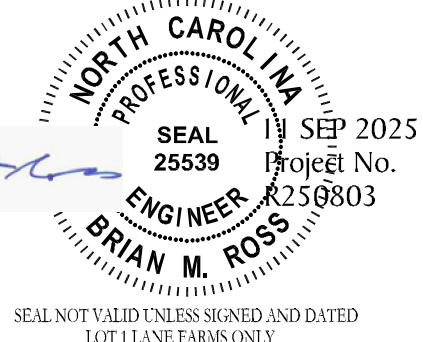
7. ALL FOOTINGS SHALL HAVE MINIMUM 2" PROJECTION ON EACH SIDE OF FOUNDATION WALLS.

## ABBREVIATIONS

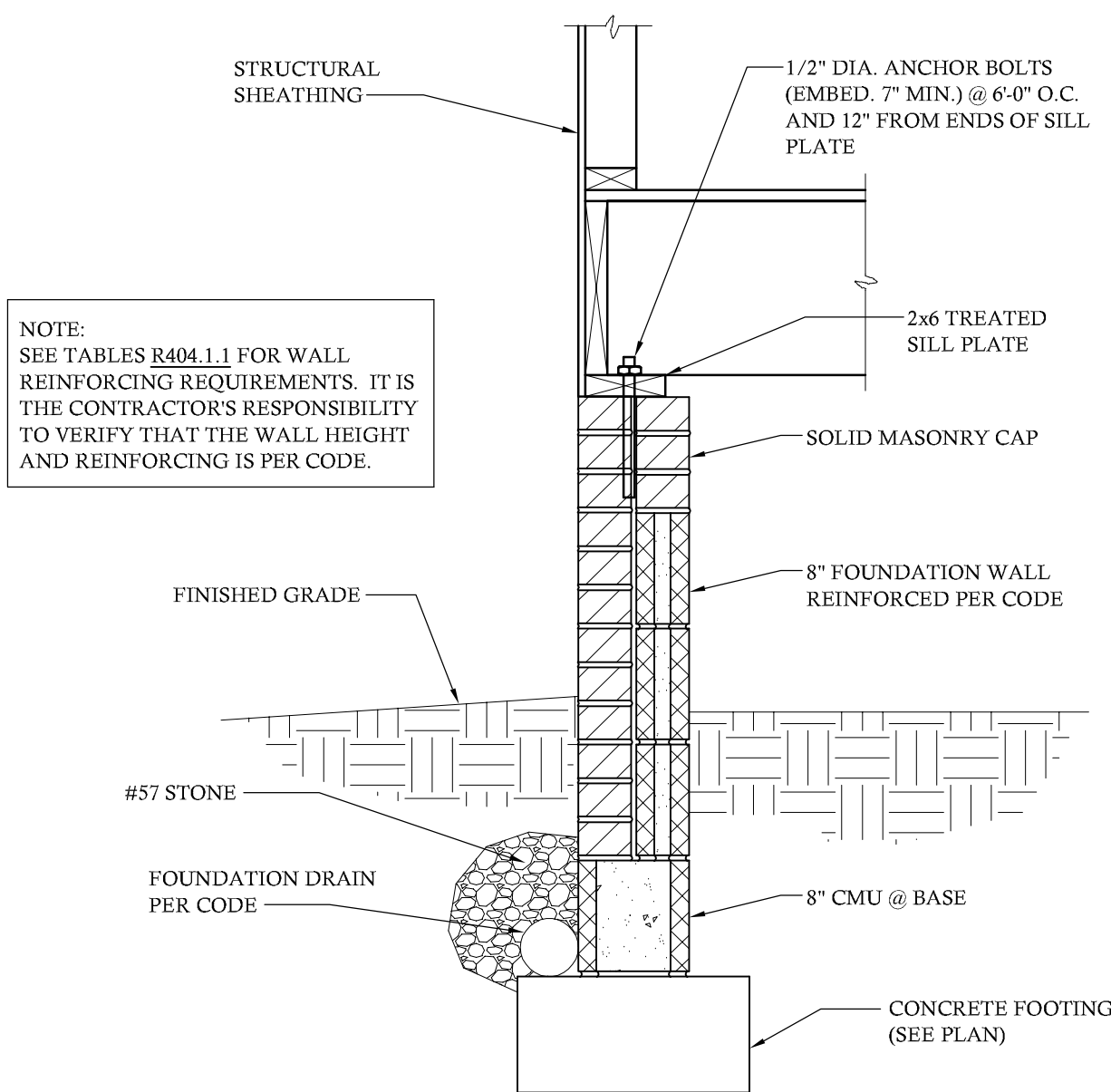
|       |                         |
|-------|-------------------------|
| CONC  | CONCRETE                |
| CONT  | CONTINUOUS              |
| DBL   | DOUBLE                  |
| DJ    | DOUBLE JOIST            |
| DSP   | DOUBLE STUD POCKET      |
| EA    | EACH                    |
| FL PT | FLAT PLATE              |
| FTG   | FOOTING                 |
| HGR   | HANGER                  |
| LVL   | LAMINATED VENEER LUMBER |
| NTS   | NOT TO SCALE            |
| OC    | ON CENTER               |
| PT    | PRESSURE-TREATED        |
| RS    | RAFTER SUPPORT          |
| SC    | STUD COLUMN             |
| SP    | STUD POCKET             |
| TJ    | TRIPLE JOIST            |
| TYP   | TYPICAL                 |
| UNO   | UNLESS NOTED OTHERWISE  |
| XJ    | EXTRA JOIST             |

STRUCTURAL DESIGN IN ACCORDANCE  
WITH: NORTH CAROLINA STATE  
RESIDENTIAL CODE 2018 EDITION IRC

ENGINEER'S SEAL APPLIES TO STRUCTURAL  
COMPONENTS ONLY AND DOES NOT  
CERTIFY ARCHITECTURAL LAYOUT OR  
DIMENSIONAL ACCURACY.  
SEAL APPLIES ONLY FOR LOT NUMBER  
INDICATED AND SIGNED PLANS MAY NOT BE  
COPIED. FAILURE TO NOTIFY THE ENGINEER  
OF ADDITIONAL USE OF THE PLANS WILL  
VOID THE LIABILITY OF ROSS LINDEN  
ENGINEERS P.C.



SEAL NOT VALID UNLESS SIGNED AND DATED  
LOT 1 LANE FARMS ONLY



8" FOUNDATION WALL  
SCALE: 1" = 1'-0"

